1877 **MICROPHONE (Carbon)** **T A Edison (USA)**

Among the earliest devices intended for converting vibration into electrical impulses was Reis' loose metal-contact transducer which is reported to have transmitted tones of different frequencies, but not intelligible speech. This latter event seems first to have been achieved by Bell, using a magnetic microphone, on 3 June 1875. However, Bell's microphone proved not to be sufficiently sensitive for telephone work and the experiments of Berliner, Edison, Hughes and others soon thereafter introduced a long era of dominance for the loose-contact carbon transducer. To Edison goes the credit of being the first to design a transducer using granules of carbonised hard coal, still used in present-day microphones.

The carbon granules are made of deep-black 'anthraxylon' coal ground to pass a 60–80 mesh, treated chemically and roasted in several stages under a stream of hydrogen. This drives out volatile matter, washes out extraneous compounds and carbonises the coal. The last step of the process is magnetic and air-stream screening to eliminate iron-bearing and flat-shaped particles.

SOURCE: 'A century of microphones' by B B Bauer *Proc. IRE* p 721 (May 1962)

SEE ALSO: T A Edison: US Patent No 474 230 filed 27 April 1877. Also US Patent No 474 231/2